

CERTAMEN MELASTOMATACEIS XXIII.

John J. Wurdack

U. S. National Herbarium, Smithsonian Institution

LAVOISIERA ORDINATA Wurdack, sp. nov.

In systemate Cogniauxii L. bicolori Naud. ex descr. et photic. affinis, foliorum pubescentia densiore floribus 5-meris differt.

Frutex 0.5-2 m. Ramuli primum quadrati et breviuscule (alis 0.5 mm) 4-angulati demum teretes sicut folia sepala extus hypanthiaque dense setulosi, pilis 0.5-1 mm longis erectis vel paulo appressis caduce glanduliferis (in folia ca. 8-10/mm quad.) laevibus et modice vel densiuscule glandulis aureis armati. Folia sessilia patentia laxa conferta, (0.5-)0.8-1.4 cm longa lataque ovati-orbicularia vel ovata, apice late acuto vel obtuso basi paulo (0.5-2 mm) cordata 3(-5)-nervata nervulis invisis. Flores 5-meri ad ramorum apices pauciglomerati, pedicellis ca. 0.5 mm longis. Hypanthium (ad torum) 3.5-4 mm longum inconspicue 10-costulatum; calycis tubus 0.3 mm longus, lobis 1-2(-2.8) mm longis triangularibus apicibus unisetiferis intus glabris et resinoso-glandulosis. Petala roseo-rubra 8-9.5 X 5.5-5.8 mm obovata apice unisetuloso setula caduce glandulifera alioqui glabra. Stamina dimorphica glabra; filamenta 3.7-4.2 mm longa; antherarum thecae (rostris exclusis) 3.3 vel 1.8 mm longae rostris 0.6-0.7 mm longis; connectiva 4-5 vel 0.7-1 mm prolongata, appendicibus ventralibus 1.2 X 0.7-1.1 vel 0.3-0.4 X 0.2-0.4 mm rotundatis vel paulo emarginatis. Stigma punctiforme; stylus 5.5 X 0.4-0.6 mm glaber; ovarium (4-)5-loculare apice 5-lobulato ca. 0.5-0.7 mm circum stylum prolongato; semina 0.7 X 0.3-0.4 mm paulo curvata in lineis paululo foveolata.

Type Collection: H. S. Irwin, J. W. Grear, Jr., R. Souza, & R. Reis dos Santos 12695 (holotype US 2530439; isotype NY), collected on the rocky slopes of Chapada dos Veadeiros, 15 km west of Veadeiros, Goiás, Brazil, elev. 1000 m, 12 Feb. 1966. "Shrub to ca. 2 m tall. Corolla rose-red."

Paratypes (all from Chapada dos Veadeiros, elev. 1000-1200 m): E. Y. Dawson 14597; Irwin, Souza, & Reis dos Santos 9311; Irwin, Grear, Souza, & Reis dos Santos 12660; Irwin, Harley, & Smith 32750.

From the plane leaves, fine glandular pubescence, and short persistent calyx lobes, L. ordinata would key to spp. 24-26 of Cogniaux' Monograph, differing from them in the 5-merous flowers. Both L. nervulosa Naud. and L. selloana Cogn. have larger (2-4.5 cm long) leaves, while the pubescence of L. bicolor (Macbride photograph 36111) is obviously much sparser. The Dawson collection of the Veadeiros species puzzled me several years ago (cf. Los Angeles Co. Mus. Contr. Bot. 28: 7. 1959), but I feel

somewhat more intrepid now. In general aspect (leaves and glandular pubescence), L. ordinata resembles Microlicia pilosissima Cogn.; however, the type collection of that Serra da Lapa species (Riedel 1350, LE) has a 3-celled ovary with an essentially truncate apex. I have seen no recent collections of M. pilosissima.

LAVOISIERA QUINQUENERVIS Wurdack, sp. nov.

In dispositione Cogniauxii sectionis Cataphractae omnibus speciebus foliis 5-nervatis differt.

Ramuli sicut folia calycis lobi extus hypanthiaque primum inconspicue glandulis clavatis 0.05-0.1 mm longis sparsiuscule induti mox glabrati, in ramulis inter petiolos inconspicue setulosi, internodiis glandulis caducis exceptis glabris. Folia sessilia laxe conferta subplana, 0.8-1.5 X 0.5-0.9 cm ovata, apice setuloso-acuminato, basi truncata vel paulo amplexante, marginibus exceptis glabrata modice ciliata ciliis rigidiusculis laevibus plerumque 1-1.5 mm longis et 0.7-1 mm inter se distantibus caduce glanduliferis, 5-(vel inflorescentiam versus usque ad 9-) nervata, nervis subtus obtuse elevatis nervulis invisis. Flores 6-meri in ramulis terminalibus solitarii; hypanthium (ad torum) 6 mm longum glandulis caducis exceptis glabrum; calycis tubus 0.7-1 mm longus, lobis 7-8 X 2.5-2.7 mm anguste oblongis (apice anguste acuto) post anthesim deciduis, ad margines ciliis glanduliferis 1.5-3 mm longis ornatis alioqui glabris. Petala 20-25 X 12-15 mm oblongo-obovata rotundata sparse glanduloso-ciliolata, ciliis 0.05-0.1 mm longis, apice unisetoso seta laxa 2-2.5 mm longa. Stamina dimorphica glabra; filamenta 8 vel 6 mm longa; antherarum thecae (rostris exclusis) 5 vel 4 mm longae, rostris 0.5-0.7 mm longis; connectiva (usque ad filamentum insertiones) 7-7.5 vel 2-2.5 mm prolongata, appendicibus ventralibus 1.5 X 1 vel 1 X 0.7 mm emarginatis. Stigma punctiforme; stylus 13 X 0.5-0.7 mm glaber; ovarium 6-loculare glabrum.

Type Collection: H. S. Irwin, R. Souza, & R. Reis dos Santos 11197 (holotype US 2530443; isotype NY), collected on the campo slope immediately east of Lagoa Paranoá, Distrito Federal, Brazil, elev. 975 m, 11 Dec. 1965. "Shrub ca. 1 m tall, much branched. Corolla magenta; anthers yellow, the connectives scarlet."

In Cogniaux' Monograph, the rigid leaf ciliation would indicate Sect. Cataphractae; in the species group with 3-nerved leaves, all (ex descr.) have much smaller petals 10-15 mm long as well as individual pubescence and other differences. Actually L. quinquenervis somewhat bridges the gap between Sections Cataphractae and Gentianoideae, but has much stiffer cilia than the species of Sect. Mucorosae (indicated by de Candolle as the gap-bridging group in foliar pubescence). All of the species of Sect. Mucorosae with deciduous calyx lobes have at least the young leaves glandular-setulose beneath and the calyx lobes glandular-setulose externally. From the Macbride photograph (16670), Glaziou 21311, the basis of a nomen nudum, is probably the same as Irwin et al 11197. To conserve the type material,

all floral dimensions given for L. quinquenervis were taken from dry flowers.

RHYNCHANTHERA CONSIMILIS Wurdack, sp. nov.

R. roseae Cogn. affinis, hypanthiis sparse glanduloso-setulosis calycis lobis brevioribus differt.

Ramuli primum quadrangulati demum teretes sicut inflorescentia sparsissime caduceae glanduloso-setulosi pilis ca. 0.5 mm longis. Petioli 0.3-0.6 cm longi glabri; lamina 2.5-7 X 0.3-0.8 cm anguste lanceato-oblonga utrinque acuta, rigidiuscula et minute serrulata dentibus ca. 0.1 mm altis et 0.5 mm inter se distantibus, supra et subtus glabra, trinervata (foliis inferioribus indistincte 5-nervatis) nervis secundariis ca. 1 mm inter se distantibus supra invisibilibus nervulis plerumque non evolutis. Panicula submultiflora; flores 5-meri in ramulis subsecundi, bracteis parvis usque ad 3 mm longis ellipticis, pedicellis ca. 1 mm longis. Hypanthium (ad torum) 4.5 mm longum basin versus sparse glanduloso-setulosum, pilis 0.3-0.5 mm longis, apicem versus glabrum; calycis tubus 0.5 mm altus, sinibus extus glabris, lobis 3 mm longis subulatis minute (0.05 mm) glanduloso-ciliolatis, apice unisetuloso setula 0.1-0.2 mm longa. Petala 14 X 9 mm obscure (0.05 mm) glanduloso-ciliolata obovato-elliptica, apice late acuto vel obtuso. Stamina maiorum: filamentum 8 mm longum; antherae thecae (rostrum excluso) 6 X 1.2 mm, rostro 3 X 0.25 mm, connectivo 12.5 mm prolongato parte apicali per 4 mm ca. 1.5 mm lata parte basali 0.7 mm lata. Stamina minora: filamenta 5.5 mm longa; antherarum thecae (rostrum exclusis) 5 X 1 mm, rostro 3 X 0.25-0.3 mm, connectivo 4.5 mm prolongato 0.3 mm lato. Staminodia 4 X 0.2-0.3 mm linearia. Stylus 18 X 0.4-0.3 mm glaber; ovarium 3-loculare apice inconspicue (0.05 mm) glanduloso-puberulo.

Type Collection: H. S. Irwin, J. W. Grear, Jr., R. Souza, & R. Reis dos Santos 15649 (holotype US 2530431; isotype NY), collected in wet campo near gallery forest of the Rio Torto, ca. 10 km northeast of Brasília, Distrito Federal, Brazil, elev. 975 m, 6 May 1966. "Shrub ca. 1 m tall. Corolla magenta. Fruit purple."

The Paraguayan relative has more sharply angled stems, essentially glabrous (very sparsely glandular-setulose with caducous hairs 0.2 mm long) hypanthia with single toral setulae in the calyx sinuses, and calyx lobes 5-7 mm long. Rhynchanthera verbenoides Cham., R. ternata Cogn., and R. linearifolia Hoehne (the latter two ex char.) differ at least in the 5-nerved leaves hispid on the nerves beneath and setulose (except R. ternata) longer calyx lobes.

POTERANTHERA ANNECTANS Wurdack, sp. nov.

Differt a P. pusilla antherarum fertilium thecis non truncatis connectivis magis prolongatis, staminodiis evolutis.

Herba 10-25 cm alta plerumque superne ramosa, caulis ramulorumque internodiis glabris quadrangulatis nodis setis laevibus glanduliferis paucis ca. 1 mm longis armatis. Folia

sessilia 7-13 X 0.4-0.6 mm uninervata distanter ciliato-serrulata, ciliis glanduliferis 0.7-1 mm longis, vel interdum integra alioqui glabra. Flores numerosi in ramulis terminales 5-meri; pedicelli 0.5 mm longi glabri. Hypanthium 1.4 X 0.7-0.9 mm infra torum constrictum glabrum; calycis tubus 0.1-0.15 mm longus, lobis subulatis 1 mm longis (seta exclusa) seta unica glandulifera 0.8 mm longa terminatis interdum setulis paucis glanduliferis marginalibus vel intersepalis armatis. Petala 5 X 2 mm obovato-oblonga, apice abrupte acuto et seta unica glandulifera 0.4 mm longa terminato alioqui glabra. Stamina fertilia: filamenta 2.3 mm longa glabra; antherarum thecae 1.6 X 0.45 X 0.5 mm subulatae poro 0.1 mm diam. ventraliter inclinato; connectivum 0.8-1 mm prolongatum, appendice ventrali 0.35 X 0.35 mm hebeti. Staminodia: filamenta 2 mm longa glabra; thecae steriles 0.4 X 0.1 mm, connectivo 0.2 mm prolongato, appendice ventrali 0.15 X 0.15 mm. Stigma truncatum; stylus 5.8 X 0.15 mm glaber; ovarium 3-loculare superum glabrum; semina subcochleata muricata 0.4 X 0.25 mm.

Type Collection: H. S. Irwin, J. W. Grear, Jr., R. Souza, & R. Reis dos Santos 16322 (holotype US 2504187; isotype NY), collected at gallery forest margin about 86 km north of Xavantina, Mato Grosso, Brazil, elev. 550 m, 31 May 1966. "Herb ca. 10 cm tall. Corolla lavender-purple; anthers yellow. Common."

Paratypes (both Mato Grosso, Brazil): Irwin, Souza, Grear, & dos Santos 16977, from periodically flooded campo ca. 30 km south of Xavantina, elev. 400 m; Ratter, de Santos, Souza, & Ferreira R-1364, from ca. 270 km north of Xavantina.

The few collections of P. pusilla are much less robust plants with broad-pored anthers only 0.7 mm long, connectives prolonged only 0.1 mm, and staminodia not developed; in other qualitative features, the two species are alike. I have recently examined Riedel 1034 (LE) and have again confirmed the absence of staminodia in P. pusilla; the illustrations from both Bongard and Flora Brasiliensis are accurate in floral details. The presence of staminodia in P. annectans negates one of the distinctions from Acisanthera (cf. Fieldiana Bot. 29: 541. 1963), but the combination of other characters still seems at present to warrant generic differentiation.

In his original publication of P. pusilla, Bongard cited the collector as Langsdorff, the month of collection as October. Riedel was the botanical collector on Langsdorff's folly-ridden expedition across central Brazil and down the Amazon; the only collection cited by Cogniaux in Flora Brasiliensis was Riedel 1034, which however was collected (fide the label) in May 1827. As listed in the first volume of Flora Brasiliensis, Riedel's itinerary at that time is rather vaguely defined, but the "S. da Chapada" is evidently near Cuiabá in Mato Grosso, rather than in Goiás.

TIBOUCHINA STELLIPILIS Wurdack, sp. nov.

Sect. Pleroma. A sectionis speciebus mihi cognitis foliis

subtus pilis stellatis dense indutis differt.

Ramuli primum rotundato-quadrangulati mox teretes sicut petioli foliorum subtus venae primariae bracteae hypanthiaque modice strigosi, pilis laevibus (0.5-)1-1.5(-2) mm longis. Petioli 0.6-1 cm longi; lamina tenuiter coriacea 3-5 X 1.5-2.5 cm elliptica vel ovato-elliptica, apice acuto, basi obtusa vel rotundata, 5-nervata paribus exterioribus usque ad basim liberis vel paulo (0.5-1 mm) coalitis nervis secundariis nervulisque subtus ob pilos occultis, supra modice bullato-strigosa pilorum basibus expansis sparse barbellatis 0.5 mm latis apicibus seta laevi unica 0.7-1 mm longa ornatis, subtus in superficie pilis stipitato-stellatis (stipite ramisque plerumque 0.1-0.2 mm longis) dense induta in venulis pilis paulo supra basim stellatis distaliter per 0.7-1 mm laevibus sparse vel modice ornata. Panicula pauciflora ca. 3 cm longa; flores 5-meri, pedicellis 2-3 mm longis, bracteis 3-5 mm longis ellipticis caducis. Hypanthium (ad torum) 5.5 mm longum; calycis tubus 0.8 mm longus, lobis 2.3 X 1.7 mm ovatis acutis ad basim contiguus. Petala densiuscule pilis eglandulosis 0.2-0.4 (-0.5) mm longis ciliolata 9-9.5 X 7-7.2 mm obovata apice rotundato-truncato. Stamina paulo dimorphica; filamenta 8 vel 5.5 mm basim versus modice pilis glanduliferis 0.3-0.7 mm longis puberula; antherarum thecae subulatae 7.2 vel 6.8 X 0.7 mm; connectivum 1 vel 0.4 mm prolongatum ventraliter paulo bilobulatum. Stigma truncatum; stylus 16 X 0.6-0.4 mm centraliter sparsissime pilis appressis eglandulosis ornatus; ovarii apex dense pilis laevibus 1-1.5 mm longis eglandulosis sericeo-strigosus.

Type Collection: G. T. France 4806 (holotype US 2521350; isotype NY), collected at the base of sandstone cliffs, Serra Morro do Chapéu, Carolina, Maranhão, Brazil, 29 March 1967. "Subshrub; corolla pale purple."

Tibouchina stellipilis would key in Cogniaux' monograph to species 78-80 (all with gland-tipped hypanthial hairs and smooth vegetative pubescence) or species 81-83 (with much sparser smooth pubescence on the lower leaf surfaces). Minutely roughened ("pinoid") foliar hairs among Brazilian species are found in T. formosa Cogn., T. nervulosa Cogn., T. castellensis Brade, and species 57-60, but none of these have truly stellate hairs with long arms.

TIBOUCHINA LAEVICAULIS Wurdack, sp. nov.

Sect. Pleroma. In systemate Cogniauxii, T. litorali Ule affinis, caulibus laevibus vel sublaevibus petiolis laminisque longioribus differt.

Frutex pauciramosus 1.5-3.5 m altus. Ramuli floriferi primum sulcato-quadrangulati demum teretes, nodis exceptis glabri; ramuli non floriferi sparse strigulosi. Petioli 0.8-2 cm longi sicut nodi laminae supra pedicelli hypanthiaque dense strigulosi, pilis 0.7-1.4 mm longis subgracilibus densiuscule minuteque barbellatis; lamina 5-13 X 2-5.5 cm rigidiuscula oblongo-elliptica vel oblongo-ovata, apice acuto basi rotundata, subtus dense setulosa pilis gracilibus minute barbellatis,



5-nervata nervis secundariis ca. 1.5-2.5 mm inter se distantibus. Panicula oblonga ca. 15 cm longa submultiflora, axe principali nodis exceptis glabro; flores 5-meri, pedicellis 5(-7) mm longis, bracteis duabus anguste ovatis 5 mm longis ad anthesim caducis ca. 1 mm infra hypanthii basim insertis. Hypanthium (ad torum) 7.5 mm longum; calycis tubus 0.6 mm altus, lobis lanceatis 7-7.5 X 3 mm extus strigulosus intus glabris post anthesim deciduis. Petala ciliolata alioqui glabra 12.5-15.5 X 11-13 mm late obovata, apice rotundato vel paulo emarginato. Stamina paulo dimorphica; filamenta 9 vel 8 mm longa centraliter sparsiuscule glanduloso-puberula; thecae subulatae (poro ventraliter inclinato 0.2 mm diam.) 9 vel 7.5 X 1-1.2 mm, connectivo 1 vel 0.6 mm prolongato ventraliter bilobulato glabro. Stylus 13 X 0.8-0.4 mm glaber; stigma punctiforme; ovarium dense sericeo-strigulosum.

Type Collection: H. S. Irwin & T. R. Soderstrom 5247 (holotype NY; isotype US), collected among rocks on dry slopes of Chapada da Contagem, ca. 20 km east of Brasília, Distrito Federal, Brazil, elev. 700-1000 m, 17 Aug. 1964. "Corolla deep violet."

Paratypes (all D. Federal, Brazil): D. Sucre & E. P. Heringer 537, from Ponte da São Bartolomeu, 17 June 1965; Irwin, Grear, Souza, & dos Santos 15424, from Córrego Taquarí, east of Lagôa Paranoá, elev. 975 m, 28 April 1966; J. M. Pires 58094, from between Brasília and Fercal, 30 June 1964.

Tibouchina litoralis, of which I have examined a probable isotype (Mus. Nac. Rio 114953), has moderately fine-setulose stems, nearly sessile (petiole 0.3-0.5 cm long) leaves with the blade 3-4 X 2-2.5 cm, and styles basally sparsely glandular-puberulous. Tibouchina discolor Brade has smooth trichomes, nearly glabrous upper leaf surfaces, and smaller flowers (anther thecae ca. 5 mm long dry, rather than 7-8 mm). From the photograph (Macbride 16756), Glaziou 21374 is probably T. laevicaulis. Cogniaux had annotated this Glaziou collection as an undescribed species related to T. reichardtiana Cogn.; however that Guanabara species and its relatives all have moderately strigulose stems, gland-tipped calycine hairs, and basally puberulous styles, as well as (at least in T. reichardtiana and T. gaudichaudiana [DC.] Baill.) non-barbellate hairs on the vegetative parts and hypanthia. The leaves of T. laevicaulis are usually opposite; however, in the Córrego Taquarí paratype, the leaves are opposite or ternate.

BRACHYOTUM HARLINGII Wurdack, sp. nov.

B. tyrianthino Macbr. affinis, petalorum ciliis non glandulosis antherarum connectivis exappendiculatis differt.

Trichomata minutissime sparsiusculeque aspera. Ramuli sicut petioli foliorum venae primariae subtus pedicellique densiuscule appresso-setulosi pilis gracilibus ca. 0.6-0.8 mm longis.

Petioli 0.3-0.5 cm longi; lamina (1.2-)1.5-2 X (0.7-)1-1.5 cm, oblongo-elliptica apice obtuso vel rotundato basi rotundata, supra modice laxaque strigulosa pilis gracilibus ca. 1 mm longis, subtus sparsiuscule setulosa pilis gracilibus 0.4-1 mm longis,

trinervata. Flores 5-meri in foliorum superiorum axillis solitarii, pedicellis persistenter bifoliolatis supra foliola ca. 5-8 mm longis. Hypanthium (ad torum) 5 mm longum sicut sepala extus modice laxo-strigosum pilis gracilibus ca. 1-1.3 mm longis; calycis tubus 0.3-0.6 mm longus, lobis 7.3-7.6 X 3.4-3.6 mm oblongo-lanceatis apice acuto intus per ca. 4-4.5 mm sparse strigulosus. Petala ut videtur atropurpurea 15-16 X 12-13 mm obovata asymmetricice truncata ciliis 0.1-0.4 mm longis plerumque eglandulosus. Stamina glabra, filamentis 7 mm longis, antherarum thecis 6.5-6.7 X 1 mm oblongis et paulo subulatis, poro minuto 0.2 mm diam., connectivo exappendiculato. Stylus 24 X 0.4 mm glaber per ca. 6 mm exsertus; ovarii apex per 1.6 mm dense strigosus pilis eglandulosus ca. 0.3-0.8 mm longis, lobis apicalibus vix evolutis ca. 0.2 mm longis.

Type Collection: G. Harling, G. Storm, & B. Ström 8038 (holotype GB), collected at Campamento San Miguel along Sigsig-Gualaquiza road, Prov. Morona-Santiago, Ecuador, elev. 3000 m, 8 April 1968. "Bush 0.5 m high. Inflorescence violet-blue."

Brachyotum tyrianthinum has stouter and more closely appressed stem hairs, glandular corolla cilia, and ventrally appendaged anthers. Among the Ecuadorian species with roughened hairs, B. rugosum Wurdack has 5-nerved leaf blades, 2-3-flowered dichasia, 4-merous flowers, shorter calyx lobes which are glabrous within, and appendaged anthers, while B. rostratum (Naud.) Triana has more expanded upper leaf surface hairs, mostly ternate flowers, sepals glabrous within, glandular petal cilia, and glandular ovary pubescence. None of the near-sympatric Ecuadorian species (B. fraternum Wurdack, B. ecuadorense Wurdack, B. fictum Wurdack, B. rugosum, B. rostratum) have parental features which would suggest a possible hybrid origin for B. harlingii.

BRACHYOTUM URIBEI Wurdack, sp. nov.

B. rugoso Wurdack affinis, trichomatibus minus asperis ramulorum pilis incurvo-patentibus calycis lobis oblongis differt.

Trichomata basaliter minutissime aspera. Ramuli sicut petioli foliorum venae primariae subtus pedicellique modice incurvo-setosi pilis gracilibus 2-3 mm longis. Petioli 0.7-1.3 cm longi; lamina (3-)4-6.5 X (1.8-)2.5-4.3 cm oblongo-ovata vel oblongo-elliptica apice obtuso basi obtusa vel rotundata, supra paulo rugoso-bullulata et sparsiuscule laxo-strigosa pilis gracilibus 1-2 mm longis, subtus in venis secundariis venulisque sparsiuscule appresso-setosa pilis gracilibus 1.5-2 mm longis, 5(-7)-nervata. Flores 4-meri in foliorum superiorum axillis solitarii, pedicellis infra bracteolas 0.4-1 cm longis supra 0.4-0.5 cm, bracteolis 9-11 X 1.1-1.6 mm oblanceatis persistentibus. Hypanthium (ad torum) 7 mm longum sicut calycis lobi extus sparsiuscule laxo-strigosum pilis gracilibus plerumque 1.5-2 mm longis; calycis tubus 0.8 mm altus, lobis 7 X 2.7-2.8 mm anguste oblongis acutis intus glabris. Petala 17.5-18 X 14 mm obovato-elliptica apice obtuso ciliis 0.2-0.8 mm longis

eglandulosis alioqui glabra. Stamina glabra; filamenta 5.5-5.6 mm longa; antherarum thecae 5.8-6 X 0.8-0.9 X 1 mm, poro 0.3 mm diam., connectivi appendice ca. 1 mm longa ca. 0.2 mm bilobulata a thecis ca. 0.5-0.6 mm libera. Stylus 27 X 0.4-0.5 mm glaber ca. 7 mm exsertus; ovarii apex per ca. 3.5 mm dense strigosus pilis eglandulosis usque ad 1.2 mm longis, lobis apicalibus ca. 1 mm longis.

Type Collection: L. Uribe 3847 (holotype US 2370311; isotype COL), collected at "monte Puracé camino hacia la laguna de San Rafael," Depto. Cauca, Colombia, elev. 3000 m, 7 Sep. 1961. "Arbusto de 1-2 metros de altura. Flor con cáliz rojo y corola morada."

Brachyotum rugosum has much more obviously roughened trichomes, shorter and strictly appressed stem pubescence, 2-3-flowered inflorescences, and shorter apically subulate calyx lobes. Brachyotum uribei is also somewhat suggestive of B. campanulare (Bonpl.) Triana, which has smooth hairs, smaller leaves, mostly ternate flowers, and gland-tipped petal cilia. Certainly there are no close Colombian relatives.

MERIANIA PASTAZANA Wurdack, sp. nov.

M. rigidae (Benth.) Triana arcte affinis, foliis proportionaliter longioribus calycibus longioribus ovarii apice circum styli basim minus prolongato differt.

Arbor 6-10 m alta, foliorum subtus glandulis minutis 0.03-0.05 mm longis sparsis caducis exceptis glabra; ramuli primum obtuse sulcato-tetragoni demum teretes, linea interpetiolarium tenerrima evoluta. Petioli 1-2 cm longi; lamina 11-18 X 5.3-9.3 cm, elliptica apice hebeti-acuto vel rotundato basi late acuta vel obtusa, coriacea et integra, subtus sparse puncticulata, 5-nervata nervis secundariis 4-5 mm inter se distantibus nervulis subtus paulo elevato-reticulatis (areolis ca. 1-1.5 mm latis). Panicula 10-25 cm longa (pedunculo 4-9 cm longi incluso) submultiflora; flores 5-meri, pedicellis 7-9 X 1.5 mm, bracteolis 0.5-0.6 mm longis triangularibus crassis deciduis. Hypanthium (ad torum) 5-6 mm longum teres; calyx 4-4.5 mm longus integer, dentibus exterioribus obsoletis. Petala 25-34 X 20-24 mm obovata glabra. Stamina isomorphica glabra; filamenta 12-13 mm longa; antherarum thecae 10-12 X 1.6-2 X 1.5 mm subulatae declinatae, poro 0.4 mm diam. dorsaliter inclinato, cornu basali 3.5-4 mm longo hebeti-acuto, connectivo ad basim dorsaliter paulo (0.2-0.3 mm) per 4.5 mm elevato sed dente ascendenti non evoluto. Stigma non expansum; stylus 16-17 X 1.3-0.6 mm glaber; ovarium 5-loculare, apice paulo lobulato 0.3-0.4 mm circum stylum protracto.

Type Collection: G. Harling, G. Storm, & B. Ström 10198 (holotype US 2584333A; isotype GB), collected at Mera, Prov. Pastaza, Ecuador, 25 May-6 June 1968. "Tree 10 m with stem thickness 10-12 cm and very hard wood. Buds red; corolla salmon red; filaments red; anthers light yellow; stamen appendage violet blue."

Paratypes (both Pastaza, Ecuador): H. Lugo 861 (GB, US),



Río Tigre 4 km from Mera, 20 Mar. 1969. "Corolla clear tomato red."; H. Lugo 821 (GB, US), Colonia Álvarez Niño 6 km from Mera, 19 Mar. 1969. "Corolla tomato red."

Meriania rigida has elliptic-orbicular leaf blades with length/width ratio 1.2-1.5 (rather than 1.8-2.2), rose to red-violet petals which are usually only up to ca. 21 mm long, calyx 2-2.2 mm long above the torus, stamen connectives with a more prominent suggestion of an ascending dorsal appendage (up to 0.9 mm free in Loja collections), and the ovary prolonged around the style base 1.5-1.7 mm. Loja material (Steiermark 54428) of M. rigida shows the acute ovary apex teeth described by Bentham, while Azuay sampling (Maguire & Maguire 61704) has the ovary apex with only bluntly bilobulate teeth as well as only a suggestion of an ascending connective tooth (ca. 0.2 mm free, rather than 0.6-0.9 mm as in the Steiermark collection); however subspecific distinction is not justified until more collections can be studied.

GRAFFENRIEDA SCANDENS (Gleason) Wurdack, comb. nov.

Ptilanthus scandens Gleason, Bull. Torrey Club 72: 472. 1945.

In Cogniaux' generic delimitation, G. scandens would be placed in Calyptrella, but for Ecuadorian floristic convenience, Louis Williams is being followed in combining the genera. In Cuatrecasas 15807 (isotype, US), a calyptrate thin calyx is evident in buds, the dehiscence being slightly (0.2-0.3 mm) above the torus. The dorsal tooth of the anther connective is quite rudimentary in the type, but more evident (0.1-0.15 mm long) in Ecuadorian material (Jativa & Epling 1142, Tobar Donoso, Esmeraldas), which otherwise agrees well with lowland Valle (Colombia) specimens; such a minute appendage is found in other species of Graffenrieda (G. steiermarkii Wurdack, G. micrantha [Gleason] L. Wms.). Costate (but scarcely alate) hypanthia occur in several other species of Graffenrieda. Apparently conspecific with (but perhaps infraspecifically distinguishable from) G. scandens is a population from 1500 m elev. in El Valle, Colombia (Cuatrecasas 23957), with thicker leaf blades and setula-edged hypanthial wings.

LEANDRA SUBOBRUTA Wurdack, sp. nov.

Sect. Tschudya. E descriptione et photicone L. inaequalifoliae (DC.) Cogn. affinis, petiolis longioribus ramulorum pilis densioribus longioribusque.

Frutex vel arbor parva 1-3 m. Ramuli teretes sicut petioli foliorum venae primariae subtus inflorescentia hypanthiaque pilis erectis gracilibus basim versus sparse barbellatis plerumque 0.3-0.5 mm longis dense obsiti pilis glanduliferis sparse intermixtis. Petioli (2.5-)3.5-5.5(-7.5) cm longi; lamina 8-14(-22) X 3.5-7(-11) cm oblongo-ovata, apice anguste hebeti-acuto basi paulo (0.2-0.6 cm) cordata, membranacea et subobscura ciliato-serrulata, supra et subtus modice appresso-setulosa pilis gracilibus laevibus 0.3-0.5 mm longis, 7-nervata, nervis

secundariis 0.4-0.5 cm inter se distantibus nervulis laxè reticulatis areolis 1-1.5 mm latis. Panicula 6-15 X 3-7 cm pauciflora, ramis oppositis vel 4-verticillatis; flores 5-meri sessiles, bracteolis ca. 0.5 mm longis ante anthesim caducis. Hypanthium (ad torum) 3 mm longum; calycis tubus 0.2 mm altus, lobis interioribus 0.5 mm altis ovatis ciliolatis, pilis pro parte glanduliferis, dentibus exterioribus conicis setulosos lobos interiores aequantibus; torus intus dense fimbriato-ciliolatus, pilis 0.2 mm longis plerumque glanduliferis. Petala 0.6 X 0.4-0.5 mm subobruta obtusiuscula, apice eroso 1-3-setuloso setulis 0.1 mm longis glanduliferis, alioqui glabra. Stamina isomorphica glabra; filamenta 2-2.5 mm longa; antherarum thecae 2.7-3 mm longae subulatae uniporosae, connectivo 0.2-0.25 mm prolongato simpliciter articulado non appendiculato. Stigma truncatum non expansum; stylus 4 X 0.35-0.4 mm basim versus sparsissime inconspicueque setulosus in ovarii collum 0.4 mm immersus; ovarium 3-loculare 9/10 superum, apice sparse vel modice setuloso, pilis 0.2 mm longis p. p. glanduliferis.

Type Collection: H. S. Irwin, J. W. Grear, Jr., R. Souza, & R. Reis dos Santos 16125 (holotype US 2530466; isotype NY), collected in gallery forest ca. 160 km north of Xavantina, Serra do Roncador, Mato Grosso, Brazil, elev. 500 m, 27 May 1966.

Paratypes (all Mato Grosso): Irwin, Grear, Souza, & dos Santos 16298, from ca. 86 km north of Xavantina; D. R. Hunt 5757, from the Xavantina-Cachimbo road 85 km from Xavantina; Ratter, de Santos, Souza, & Ferreira R-1429, from ca. 290 km north of Xavantina; Richards 6636 and 6639, Ratter et al R 2099, and Harley 10174, all from near the Royal Society Base Camp, 12° 49' S, 51° 46' W.

The suggested Amazonian relative has sparser cauline and inflorescence pubescence averaging 0.8-1 mm long, petioles only 0.5-1.7 cm long, upper leaf surface hairs tubercle-based, and hypanthial hairs mostly gland-tipped. The other species treated by Cogniaux in Sect. Tschudya all have short (usually only to 2 cm long) petioles. Among the more recently described species, L. purpurea Gleason has longer pubescence throughout and 5-nerved leaves obtuse at the base; L. polyadena Ule has longer pubescence and much more prominent glandular hairs; and L. phelpsiæ Gleason has eglandular completely smooth hairs and 5-nerved leaves.

MICONIA IRWINII Wurdack, sp. nov.

A speciebus 233-235 Monographiae Cogniauxii foliis utrinque acutis differt.

Arbor 4-5 m alta, 12-15 cm diam. Ramuli primum paululo compressi mox teretes sicut folia subtus inflorescentia hypanthiaque densissime pilis stellulatis vel pinoideis 0.05-0.15 mm longis latisque induti. Petioli 1-1.8 cm longi; lamina 4-8 X 2-3.5 cm elliptica, apice breviter (0.5-1 cm) gradatimque acuminato, basi late acuta, integra et coriacea, supra primum modice stellulato-puberula mox glabrata et nitidula, trinervata, nervis secundariis 2-3 mm inter se distantibus supra insculptis subtus ob pilos plerumque occultis nervulis non vel vix evolutis.

Panicula 2.5-3.5 X 2.5-3.5 cm submultiflora, ramulis dichasios 3-5-flores plerumque gerentibus; flores 5-meri sessiles, bracteolis non visis evidenter mox caducis. Hypanthium (ad torum) 2 mm altum; calycis tubus 0.5 mm altus, lobis interioribus 0.4 mm altis ovato-rotundatis extus et ad margines modice stellulato-puberulis, dentibus exterioribus parvis non eminentibus; fructuum calyces decidui. Petala minutissime granulosa 3-3.3 X 1.8-2 mm obovato-oblonga, apice rotundato. Stamina isomorphica glabra; filamenta 2.6-2.8 mm longa; antherarum thecae 2-2.1 X 0.4-0.5 X 0.5 mm oblongae, poro magno 0.3 mm diam. ventraliter inclinato, connectivo 0.4-0.6 mm prolongato ventraliter non appendiculato dorsaliter dente truncato vel paulo emarginato 0.25-0.3 X 0.3 mm descendente armato. Stigma paulo expansum 0.6-0.7 mm diam.; stylus 3.5 X 0.4-0.45 mm basin ipsam sicut ovarii apex sparsissime pilis clavatis barbellatis 0.1-0.15 mm longis armatus; ovarium 3-loculare  $\frac{1}{2}$  inferum apice excepto glabrum.

Type Collection: H. S. Irwin, R. Souza, & R. Reis dos Santos 9385 (holotype US 2530459; isotype NY), collected on a rocky slope ca. 12 km northwest of Veadeiros on the road to Cavalcante, Chapada dos Veadeiros, Goiás, Brazil, elev. 1200 m, 21 Oct. 1965. "Gnarled tree 4 m X 12 cm, frequent. Corolla and anthers white."

Paratypes (both Goiás, fruiting): Irwin, Grear, Souza, & dos Santos 12781, from 15 km northwest of Veadeiros, elev. 1000 m, 13 Feb. 1966; Harley & Barroso 11386, from Chapada dos Veadeiros, 21 Dec. 1968.

Miconia burchellii Triana, M. stenocardia Cogn. (ex char.), and M. pohliana Cogn. all have 5-7-nerved leaves rounded to cordulate at the base. Miconia weddellii Naud. (ex char.) has leaves basally rounded (but 3-nerved), racemiform panicles (the branchlets usually not dichotomizing), and anther connectives biauriculate ventrally. From the pubescence, M. herpetica DC. with subsecundiflorous inflorescence branchlets should probably be placed in this alliance, and also M. leucocarpa DC. (which may be an earlier name for M. pohliana). I have referred to M. pohliana Eiten 2960 and 3271 (from Mun. Brotas, São Paulo), both of which are conspecific with several collections from the Distrito Federal as well as not distinguishable from Minas Gerais material (Magalhães 160) distributed as M. leucocarpa. In pubescence, M. nambyquarae Hoehne also resembles the above group of species; I have identified (ex char.) Maguire et al 56568 (from west of Vilhena), Irwin & Soderstrom 6566 (from Garapú), and Prance, Silva & Pires 59178 (from Garapú), all fruiting, as this Mato Grosso species.

MICONIA COLLATATA Wurdack, sp. nov.

Sect. Glossocentrum. M. minutiflorae (Bonpl.) DC. affinis, foliorum venis secundariis 3-5 mm inter se distantibus calycis limbo distanter denticulato connectivo magis prolongato differt.

Frutex vel arbor parva 2-10 m. Ramuli teretes sicut foliorum subtus venae primariae inflorescentiaque primum

sparsiuscule stellulato-puberuli demum glabrati. Petioli (0.5-)1-2 cm longi; lamina 7-11 X 3-4 (-6) cm lanceato-oblonga apice gradatim hebeti-acuminato basi plerumque late acuta, fragilis et obscure undulato-serrulata dentibus 3-5 mm inter se distantibus ca. 0.2 mm altis, supra glabra, subtus in superficie sparsissime stellulato-puberula mox glabrata, trinervata nervis secundariis 3-4 mm inter se distantibus subplanis venulis planis laxe reticulatis areolis 0.5-0.7 mm latis. Paniculae 5-7 cm longae multiflorae, ramis plerumque 4-verticillatis; flores 5-meri, pedicellis 0.7-1.5(-2.5) mm longis, bracteolis 0.2-0.4 mm longis subulatis vel linearibus ad anthesim plerumque caducis ca. 0.1-0.2 mm infra hypanthii basim insertis. Hypanthium (ad torum) 1.1-1.2 X 1.5 mm primum basim versus sparse stellulato-furfuraceum glabratum; calycis tubus 0.3-0.4 mm altus post anthesim ad torum dehiscens, limbo brevissime (0.1 mm) undulateque 5-dentato, dentibus exterioribus minutissimis non eminentibus. Petala minutissime granulosa 2.1-2.2 X 1.1-1.3 mm obovato-oblonga, apice rotundato. Stamina paulo dimorphica glabra; filamenta 1.4-2 mm longa; antherarum thecae 0.8-1.1 X 0.3 X 0.35 mm vel 0.6-0.9 X 0.35 X 0.4 mm oblongae vel obovato-oblongae, poro lato 0.3 mm diam. ventraliter inclinato, connectivo 0.5-0.6 vel 0.2 mm prolongato ad basim dente 0.4-0.5 X 0.4-0.6 mm dorsali descendente vel appendice 0.2-0.3 X 0.3-0.5 mm trilobulata ornato. Stigma truncatum non expansum; stylus glaber 3-3.3 X 0.2-0.3 mm; ovarium 3-loculare  $\frac{1}{2}$  inferum, apice glabro.

Type Collection: H. S. Irwin, R. Souza, J. W. Grear, & R. Reis dos Santos 17991 (holotype US 2530455; isotype NY), collected in gallery forest bordered by campo, Serra do Caiapo ca. 30 km south of Caiapônia on the road to Jataí, Goiás, Brazil, elev. 950 m, 29 June 1966. "Shrub ca. 2 m tall. Corolla and anthers white."

Paratypes: Brazil: France & Silva 59642 (fruiting) and Irwin, Souza, Grear, & dos Santos 17882, both from Serra do Caiapo, Goiás; Hatschbach 7153 (US), from Barra do Tigre, Bocaiuva do Sul, Paraná; Hatschbach 14294 (US), from Fda. Lagôa, Cianorte, Paraná. Paraguay: Hassler 10566 (S) and 11324 (S), both from the Sierra de Amambay; P. Jorgensen 3841 (US), without definite locality. Argentina: H. M. Curran 27 (US), from Puerto Aguirre, Misiones.

In the widespread M. minutiflora, the secondary foliar veins are 1-2 mm apart, the calyx in bud shows distinct rounded lobes 0.1-0.2 mm high, the anther thecae are 3-4 times as long as broad, and the connectives are prolonged about 0.2 mm to the filament insertion (1/5-1/4 the anther length). The numerous other essentially glabrous and visually nondescript species of Sect. Glossocentrum have been scanned for more definite affinities, but all seem to show more divergence than M. minutiflora. Miconia molesta Cogn., from Alto Macahe, Rio de Janeiro, differs (from the description and photograph) at least in the opposite (rather than verticillate) inflorescence branches, the sessile flowers, and the densely furfuraceous

hypanthia. The general vegetative facies of M. collatata is like that of M. latecrenata (DC.) Naud. of Sect. Chaenantha. The Hassler collections of M. collatata are undoubtedly to be found in the undetermined folders of Miconia in other herbaria. It is somewhat disquieting that so widespread a species has not hitherto been described.

MICONIA PISINNIFLORA Wurdack, sp. nov.

Sect. Chaenantha. M. chrysophyllae (Rich.) Urb. affinis, foliis subtus in superficie glabris differt.

Ramuli 3-angulati sicut foliorum venae primariae subtus inflorescentia hypanthiaque densiuscule indumento appresso granuloso-lepidoto induti. Folia ternata; petioli 0.8-1.4 cm longi; lamina anguste oblongo-elliptica apice gradatim (per ca. 2-3 cm) acuminato basi acuta, firme membranacea et integra, 11-15 cm longa, 2.5-4 cm lata, supra glabra, subtus in venis secundariis venulisque sparse granuloso-furfuracea in superficie glabra, breviter (usque ad 0.5 cm) 5-plinervata (pari infra-marginali tenui incluso) nervis secundariis 0.3-0.5 cm inter se distantibus nervulis subtus planis arcte reticulatis areolis ca. 0.2-0.3 mm latis. Panicula 7-12 X 8-10 cm multiflora, ramis primariis plerumque 3-4 in quoque nodo, floribus in ramulis brevibus ultimis 2-4 obscure secundis; flores 5-meri breviter pedicellati (pedicellis 0.2-0.5 mm longis et ca. 0.2 mm infra hypanthium articulatis), bracteolis 0.2-0.4 mm longis linearibus valde caducis. Hypanthium (ad torum) 0.9-1 mm longum; calyx 0.15-0.2 mm longus et paullulo (0.05-0.1 mm) undulatus, dentibus exterioribus minutissimis inframarginalibus. Petala 1.1 X 0.7 mm obovato-oblonga extus minutissime granulosa. Stamina paulo dimorphica glabra; filamenta 1 mm longa; antherarum thecae 0.4 X 0.35 mm vel 0.3 X 0.25 mm suborbiculari-obovatae ventraliter usque ad basim rimosae; connectivum 0.5 mm vel 0.4 mm prolongatum non appendiculatum. Stigma paullulo expansum 0.25 mm diam.; stylus glaber 0.2 mm diam. in ovarii apicem paulo immersus; ovarium 3-loculare et 1/2 inferum, apice conico sparse lepidotopuberulo.

Type Collection: E. Asplund 18591 (holotype US 2441379), collected in forest near Alpayacu, Mera, Prov. Pastaza, Ecuador, elev. ca. 1100 m, 23 Nov. 1955. "Tree about 10 m high; flowers white."

The suggested relative has leaf blades beneath completely covered with lepidote hairs. I had originally identified Asplund 18591 as M. pilgeriana Ule, which has opposite leaves, stellulate hairs, and much laxer leaf vein areoles (ca. 0.5 mm wide). The whorled-leaf species of Sect. Glossocentrum (M. longifolia [Aubl.] DC., M. ternatifolia Triana, M. pastazana Wurdack) all have much laxer leaf veinlets and larger wide-pored (but not rimose) anther thecae.

MICONIA DENTICULATA Naud., Ann. Sci. Nat. ser. 3 Bot. 16: 214. 1851.

Miconia chrysanthera Cogn., Bot. Jahrb. 42: 141. 1908.



The type collection (holotype and isotype, P) of *M. denticulata* is Bonpland 3451, from Ayavaca, Piura, Peru; an excellent modern match in all ways for the type is the topotypical López, Fabris, Sagastegui, & Aguado 7760 (US). Other recent collections (all at US, often with somewhat larger leaves) include Soukup 4669, Hutchison & Wright 5064 (topotypical for *M. chrysanthera*), A. Diaz s. n., Sagastegui & Fukushima 5092, and Lopez, Sagastegui, & Suarez 2641 (Otuzco, Libertad), all except the last-listed from Cajamarca, Peru. The Bonpland collection (G-DEL; Macbride Photograph 25947) annotated by Cogniaux as *M. denticulata* is duplicated by two Paris specimens of Bonpland from Saraguro, Ecuador annotated by Triana as "*M. elaeoides* Ndn.??"; this material, in young bud and fruit, is well-matched by Dodson & Thien 1335 (US), from the Loja-Zamora road, elev. 2800 m, at anthesis, which is *M. theezans* (Bonpl.) Cogn. Recent Colombian specimens which had been identified as *M. denticulata* are actually of other species.

ALLONEURON HEXAMERUM Wurdack, sp. nov.

*A. bullato* Wurdack affinis, foliis amplioribus tenuioribus floribus hexameris differt.

Ramuli quadrisulcati sicut petioli foliorum venae primariae subtus inflorescentiae sparsiuscule vel modice appresso-setosi pilis plerumque 1-1.4 mm longis apicem versus laevibus ad basin paulo expansis et imperspicue papillosis. Petioli (3-)7-11.5 cm longi; lamina (12-)17-24 X (8-)11-14 cm oblongo-ovata apice gradatim vel subabrupte per 1-2 cm acuminato basi truncata vel rotundata, membranacea et obscure serrulata, supra sparse strigulosa pilis plerumque 0.5-0.9 mm longis laevibus, subtus in venis secundariis tertiariisque sparse vel modice setulosa pilis gracilibus laevibus (0.4-)0.8-1.2 mm longis in venulis superficiei glabra, 7(-9)-nervata nervis secundariis plerumque 4-6 mm inter se distantibus nervulis subtus planis dense reticulatis (areolis 0.2-0.3 mm latis). Panicula 10-27 cm longa (pedunculo 3-7 cm longo incluso) multiflora; flores 6-meri haplostemoni sessiles. Hypanthium (ad torum) 3 mm longum sicut calyx extus dense setosum pilis plerumque 1-1.3 mm longis basi expansa (0.2-)0.3-0.35 mm diam. imperspicue papillosa. Calyx primum clausus demum in lobos paucos ca. 2 mm longos subsistentibus dehiscens. Petala 4.2 X 1.8-2 mm anguste obovata apice apiculato extus secus costam crassam interdum sparsissime strigulosa alioqui glabra. Stamina isomorphica glabra; filamenta 3 mm longa; antherarum thecae 1.7-1.9 X 0.7 X 0.9 mm poro singulo dorsaliter inclinato 0.25 mm diam., appendice dorsali 0.9 X 0.7 mm ovata hebeti. Stigma punctiforme; stylus 4.2 X 0.35-0.2 mm; ovarium 4-loculare omnino inferum apice glabro alis sex 0.3-0.4 mm altis cum hypanthio conjuncto; capsula 4-valvata; semina numerosa, corpore 0.5 X 0.1 mm pyramidato laevi appendice cordiformi 1.3 X 0.05 mm armato.

Type Collection: Kjell von Sneidern 1638 (holotype S), collected "in silva primaeva ad La Costa, ad pag. El Tambo," Depto. Cauca, Colombia, elev. 800 m, 17 Mar. 1938.

Paratype: von Sneidern 977 p.p. (S), topotypical, elev. 1200 m.

All previously described species of Alloneuron had considerably smaller flowers with (2-)3-celled ovaries (Phytologia 21: 360-365. 1971); seeds (where known) of the other species are without the long appendage seen in those of A. hexamerum.

ALLONEURON SNEIDERNII Wurdack, sp. nov.

A. hexameru Wurdack affinis, foliis plinervatis subtus minus pubescentibus floribus maioribus 8-9-meris distincte pedicellatis differt.

Ramuli sulcato-tetragoni sicut petioli (abaxialiter) densiuscule strigulosi pilis robustis ca. 0.3 X 0.15 mm conicis papillatis. Petioli 5-9 cm longi adaxialiter dense strigulosi pilis gracilibus ca. 1 mm longis; lamina 20-33 X 9-19 cm oblongo-ovata apice gradatim per 2-3 cm acuminato basi obtusa, membranacea et obscure serrulata, supra paulo rugulosa secus venas primarias modice setosa pilis gracillimis 1-2 mm longis secus venulas sparse caduceque gracili-setulosa in superficie sparse strigulosa pilis 0.2-0.5(-0.8) mm longis robustis, subtus in venis primariis sparsiuscule setulosa pilis gracilibus 0.1-0.2 mm longis in venulis superficieque glabra, breviter (1-1.5 cm) 7(-9)-plinervata nervis secundariis tertiariis venulisque ut in A. hexameru. Panicula 11-24 cm longa multiflora, ramis ramulisque densiuscule setulosus pilis 0.5-1 mm longis ad basim robustis; flores 8-9-meri haplostemoni, pedicellis 1.7-3 mm longis sicut hypanthio calyceque modice vel dense setosi pilis plerumque 1-1.5 X 0.15-0.2 mm basim versus papillatis. Hypanthium (ad torum) 5 mm longum; calyx in alabastris 6.3-6.7 mm longus (apice rostrato ca. 0.5-1.3 mm longo incluso) clausus ad anthesim irregulariter dehiscens lobis plusminusve persistentibus. Petala glabra 8.5-9.2 X 4.1-4.5 mm oblongo-obovata apice late acuto et mucronulato. Stamina isomorphica glabra; filamenta 3-3.7 mm longa; antherarum thecae 2.8-3 X 1.3-1.6 X 1.1-1.3 mm poro singulo 0.4-0.5 mm diam. dorsaliter inclinato, appendice dorsali 1-1.7 X 0.4-0.5 mm hebeti-acuta. Stigma truncatum 0.25-0.3 mm diam.; stylus glaber 9 X 0.35-0.2 mm; ovarium 4-5-loculare omnino inferum apice septis 8-9 hypanthio conjuncto.

Type Collection: Kjell von Sneidern 906 (holotype S), collected in "silva primaeva, La Costa, ad pag. El Tambo," Depto. Cauca, Colombia, elev. 1800 m, 31 July 1936.

Paratype: von Sneidern 977 p.p. (S), topotypical, elev. 1200 m.

The general aspect of the inflorescences in A. sneidernii is like that in Centronia or Graffenrieda.

TOPOBEA ASPLUNDII Wurdack, sp. nov.

Ex descr. T. indutae Markgr. affinis, foliis minoribus ad basim distincte cordatis ovarii apice densissime crispo-setoso differt.

Rami teretes sicut petioli pedicelli bracteae calycis lobique extus modice pilis modice graciliterque barbellatis 3-4 mm longis incurvo-erectis induti. Petioli 0.5-1.5 X 0.15-0.2 cm; lamina (acumine excluso) 9.5-17 X 7.5-11 cm elliptico-ovata apice abrupte per 0.5-1 cm caudato-acuminato basi 0.5-1 cm cordata, firme membranacea et distanter serrulata dentibus patentibus 0.5-1 cm inter se distantibus et ca. 1 mm altis multisetulosis, supra in venis primariis basim versus dense setosa alioqui glabra vel ad basim margines versus sparsissime appresso-setosa, subtus in venis primariis modice incurvo-setosa pilis barbellatis plerumque 1.5-2.5 mm longis in venis secundariis superficiei sparse setulosa pilis ca. 1 mm longis laevibus ad basim ipsam stellulato-lepidoto-expansis, 5-nervata (pari inframarginali incompleto neglecto) nervis secundariis 4-5 mm inter se distantibus nervulis subtus paulo elevato-reticulatis areolis plerumque 0.6-0.8 mm latis. Flores 6-meri axillares in quaque axilla 2-3 (4-6 per nodum), pedicellis 0.5-0.8(-1.2) cm longis; bracteae liberae 9-10 mm longae 5-7 mm latae oblongo-ovatae acuminatae intus apicem versus sparse strigosae basim versus glabrae appresso-ciliatae. Hypanthium (ad torum) 5 mm longum pilis appressis sparsis apicem versus exceptis glabrum; calycis tubus 1.5 mm longus, lobis lanceatis 5-5.5 X 2.5 mm longe (ca. 3 mm) ciliatis; torus intus densissime pilis gracilibus laevibus ad apicem crispulis ca. 3 mm longis ornatus. Petala ca. 13 X 7 mm obovato-oblonga apice late obtuso vel rotundato apicem versus extus sparsissime caduceque strigulosa et sparse ciliolata alioqui glabra. Antherarum thecae ca. 6 X 1.2 X 1 mm anguste oblongae poris duobus 0.6 mm latis dorsaliter inclinatiss; connectivum dorsaliter ca. 1 mm supra thecarum basim inconspicue tuberculatum. Stigma paullulo expansum ca. 0.3 mm diam.; stylus glaber 0.3-0.1 mm diam.; ovarium 4-loculare et 1/4-1/3 inferum apice libero ovoideo-conico ca. 2.5 mm alto pilis gracillimis laevibus crispulis ca. 2 mm longis densissimis coronato alioqui glabrum.

Type Collection: E. Asplund 10254 (holotype S), collected between Tena and Napo, Prov. Napo, Ecuador, 5 Jan. 1940.

"Epiphyte; shrub with long branches. Petals white. Anthers yellow."

Paratype: Grubb, Lloyd, Pennington, & Whitmore 1586 (NY, US), from "Shinguipino Forest between Rios Napo and Tena 8 km SE of Tena," Prov. Napo, Ecuador, elev. 450 m, 13 Sept. 1960. "Much branched shrub to 2 m."

Topobea induta has 5-plinerved leaf blades up to 25 X 15 cm and with rounded bases, ovate obtuse calyx lobes, petals 8 X 6 mm, and the ovary apex few-setulose. Despite the absence of any recent collections of T. induta, I feel sure, from Markgraf's descriptive comments on pubescence details, of the specific distinctness of T. asplundii. Topobea cutucuensis Wurdack is more distantly related. The paratype of T. asplundii was mentioned in the discussion (Phytologia 24: 208. 1972) of Blakea hirsuta Triana var. rotundata Mgf.; Asplund's flowering collection resolved the generic doubts about the Tena material and

rectified the erroneous identification.

TOPOBEA EPLINGII Wurdack, sp. nov.

T. castaneda Wurdack affinis, foliis subtus non setosis floribus maioribus differt.

Ramuli teretes sicut foliorum subtus venae primariae et secundariae pedicelli bractaeque primum sparse stellulato-pinoideo-furfuracei (pilis 0.05-0.1 mm longis) mox glabrati. Petioli 1.3-3 cm longi; lamina 6-12 X 3-6 cm elliptica apice per 0.5-1.3 cm abrupte caudato-acuminato basi obtusa, integra et tenuiter coriacea, in superficie ubique glabrata, brevissime (0.3-0.5 cm) 5-plinervata (pari inframarginali tenui neglecto) nervis secundariis principalibus plerumque 1.5-2 mm inter se distantibus subtus arcte elevatis. Flores 6-meri in quaque axilla plerumque solitarii, pedicellis 1.5-2 cm longis; bractae hypanthio et calyci ca. 0.6 cm breviores late orbiculares rotundato-truncatae ad margines membranaceae, exteriores 14 X 16 mm ad basim 4-4.5 mm coalitae, interiores 12 X 22 mm liberae imbricatae. Hypanthium (ad torum) 9 mm longum glabrum; calyx 7-7.3 mm altus glaber truncatus (dentibus exterioribus obsoletis) ad margines pellucido-membranaceus. Petala 23-24 X 20-21 mm obovata apicem versus sparse glanduloso-ciliolata (0.05 mm) alioqui glabra. Filamenta (paulo immatura) 7 mm longa glabra; antherae cohaerentes 8.8 X 2 X 2 mm rostratae (rostro ca. 4.5 X 1.2-0.6 mm) poro dorsaliter inclinato 0.7 mm lato, connectivo dorsaliter ad basim inconspicue calcarato (calcaris hebeti-acuto 0.8-1 X 0.2 mm parte libera 0.4-0.6 mm longa). Stigma longe capitatum 3 X 2.6 mm; stylus 17 X 0.5-1 mm glaber in ovarii collum 0.7 mm immersus; ovarium 6-loculare basi 3 mm infera apice conico libero 4 mm alto glabro.

Type Collection: Carlos Jativa & Carl Epling 1123 (holotype US 2639754), collected in tall primary forest at Tobar Donoso (1° 10' N, 78° 31' W), junction of Río San Juan and Río Camumbi, Prov. Esmeraldas, Ecuador, elev. 150 m, 25 July 1966. "Liana; fl pink."

The suggested Colombian relative has similar foliage which however is moderately setulose beneath and smaller (albeit qualitatively similar) flowers (outer bracts only 7 mm long; hypanthium plus calyx 14 mm long; petals 13 mm wide). No other close relatives are obvious. In Cogniaux' monograph, T. eplingii would key to near T. glaberrima Triana, which has much closer secondary leaf veins (0.5-0.7 mm apart), smaller and acute outer bracts, and smaller flowers with somewhat lobed calyx limb and longer (ca. 1.5 mm) dorsal anther calcar.